EXCISE TAXES AND EFFECTIVE PROTECTION: A NOTE

The influence of excise taxes on effective rates of protection was recently examined in two separate studies by Grubel–Johnson and by Rapp–Park. The second study analysed closely the statistical and methodological problems associated with the use of producers’ and consumers’ prices in empirical estimates of effective protection. As a consequence, it is now apparent that the Grubel–Johnson paper contains an ambiguity which may confuse researchers in the future and deserves to be cleared up.

In the Grubel–Johnson paper on p. 762, equation (2), the domestic value-added \( \bar{V}_j \) of industry \( j \) was defined as \( \bar{V}_j = S_j - \sum M_i j \), where \( S_j \) is the domestic value of the industry’s output and \( \sum M_i j \) is the value of the intermediate inputs used by the industry. It is left unclear whether the domestic sales value is at producers’ prices, which are equal to free-market value plus tariffs, or at prices charged consumers, which are equal to free market value plus tariffs and excise taxes.

Defining output at producers’ prices as \( S'_j \) and at consumers’ prices as \( S_j \) and remembering that in the input–output tables used in the Grubel–Johnson study market values are at consumer prices, the following relationships are important for estimating effective protection.

\[
S'_j = \frac{S''_j}{1 + e_j} \quad \quad (1)
\]

and

\[
S_j = \frac{S''_j}{(1 + e_j)(1 + t_j)} \quad \quad (2)
\]


\(^3\) W. V. Rapp, S. S. Park, et al., Effective Protective Rates of Korean Industries, Korean Development Association (Seoul, Korea, June 1967).
where $S_j$ is output at free-market prices, $e_j$ is the excise-tax rate and $t_j$ is the tariff rate on the output of industry $j$.

Using this new notation, equation (7) on p. 763 of the Grubel-Johnson paper should be replaced by equation (2) of this note. Equation (9) on p. 764 should be replaced with:

$$\tau_j = \frac{S''_j}{1 + e_j} - \frac{\sum M_i^{\prime},j}{(1 + t_j)(1 + e_i)} - \frac{\sum M_i^{\prime},j}{(1 + t_i)(1 + e_i)} - 1. \quad (3)$$

where the numerator is domestic value added ($V'_j$), which is derived from the definition $V'_j = S'_j - \sum M_i^{\prime},j$ and through substitution of equation (1) in it.

The new notation similarly changes equation (12) of the original article to:

$$\tau'_j = \frac{S''_j}{1 + e_j} - \frac{\sum M_i^{\prime},j}{1 + e_i} - \frac{\sum M_i^{\prime},j}{(1 + t_i)(1 + e_i)} - 1. \quad (4)$$

It is important to note that the terminological ambiguity has not invalidated the calculations of the Grubel–Johnson paper for two reasons, documented in the last complete paragraph on p. 764. First, the numerator of equation (3) was not estimated through deflation of the sales price and subtraction of inputs but was taken directly from the input–output table, and second, the newly defined $S''_j$ is equal to the original $S'_j$, both of which are the market value of final output, including excise taxes and tariffs.

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